DETAILED ACTION

1. Applicant's arguments, in Telephonic Interview on February 23, 2009, for reconsideration of the finality of last Office Action, dated December 3, 2008, with respect to the rejection(s) of Claims **1, 3 - 7, 10, 11, 13 - 21, 24 - 30** under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the finality of that action is withdrawn. However, upon further consideration, new grounds of rejection is made in view of **Moiroux et al.** (US Patent No. **7,231,547**) in view of **Tallam** (US Patent No. **6,948,099**) and further in view of **Strange et al.** (US Patent No. **6,965,989**).

2. Claims **1, 3 - 8, 10 - 22, 24 - 30** are pending. Claims **1, 10, 13, 17, 24, 28** have been amended. Claims **2, 9, 23** have been cancelled. Claims **1, 10, 13, 17, 24, 28** are independent. This application was filed on 10-16-2003.

Response to Arguments

3. Applicant's arguments have been fully considered but are partially moot due to new grounds of rejection.

3.1 In the response to the Non-Final rejection dated 8-26-2008, Applicant mentioned an IBM document dated 22 October 2002 that invalids the effective date of the Moiroux prior art reference. At that time, the Examiner saw no indication of an IBM document added to the prosecution list of documents. The Moiroux prior art is still a valid prior art reference and the grounds of rejection including the Moiroux prior art was maintained.

In the advisory action based on the Final Action dated 12-3-2008, Applicant indicated 4 Exhibits (Exhibits A, B, C and D) to be used to invalid the Moiroux prior art reference. The indicated Exhibit C (mentioned in the declaration of Brian Kunzler dated 2-3-2009) does not appear to be included in the prosecution list of documents.

The indicated Exhibit B document titled "Disclosure TUC8-2002-0172" states a Submitted Date of 10/22/2002 and a Final Deadline date of 7-18-2003. This document is ineffective since there is no disclosure what occurred between the submitted date and final deadline date. In addition, the Exhibit B document states on page 2 in the Patent Value Tool section number 2 that no prototype has been developed.

There is insufficient information provided to properly evaluate the Exhibits.

3.2 Applicant argued two prior art references.

One of the indicated references (5,178,170 and 6,925,557) discloses a specific reset signal and a special sequence utilized not to reset memory. The setting of this particular signal is continued until the reset is completed. It appears the Applicant should have been aware and should have mentioned in Applicant's invention such a specific command. It appears the Applicant should have realized that it was obvious that a specific command was needed in order not to erase volatile memory during a reboot procedure and should have indicated the same in Applicant's invention.

Applicant's invention starts operating at the initiation of an interrupt/exception (i.e. possibly detected error) by a computer system. Processing this interrupt/exception, Applicant's invention loads a special program (a data save kernel) which saves the contents of volatile memory. Now, after the data save operation completion, the

computer system can continue processing operations which may result in a system reboot. Applicant's invention appears to be the data save of volatile memory using the data save kernel software.

3.3 In order to reiterate the Examiner's position, previous responses to remarks updated have been included:

The Moiroux prior art discloses the save of system data in the event of a system crash or a system shutdown due to an error or fault condition. (see Moiroux col. 1, lines 55-60: save system memory context to non-volatile storage; indication system shutdown correctly or incorrectly (crash, abnormal condition))

The Tallam prior art discloses a computer system boot loader that loads an OS kernel under normal conditions and loads a recovery OS (reduced kernel such as a data save kernel) under system crash conditions. (see Tallam col. 5, lines 5-10: boot loader (boot control module) for loading the OS; col. 3, lines 48-49: col. 4, lines 13-17: OS rebooted; col. 3, lines 33-36: kernel reduced to only code which is necessary to implement required functions)

And, The Strange prior art discloses that a reboot procedure (a warm reboot procedure) is completed without a loss of data within computer system memory. (see Strange col. 4, lines 5-12: reboot of a file server that skips certain conventional boot processes; time is saved by avoiding a full shutdown of processor and memory; refrain from a full clearance of file server memory; col. 11, lines 2-7: full clearance (zeroing) of memory is skipped in warm reboot)

Applicant's principal argument is the capability to reboot a computer system and place a special data save kernel (core executable) into execution at reboot completion and save the contents of volatile memory. Applicant uses the term *"reboot"* multiple times within the specification with no definition of the term. Therefore, the generic definition of this particular term, "reboot", will be utilized.

The reboot of a computer system can be performed utilizing a hard reboot (with power-off and power-on sequence) or a soft or warm reboot (with no power-off and power-on sequence). Applicant's specification does not disclose what type of reboot is implemented as part of the claimed invention. After a review of definitions for the term "reboot" it was found that a power-off and power-on sequence in most situations can be part of a reboot procedure. If a reboot procedure includes a power-off and power-on sequence, then volatile memory is erased and there is no recoverable information for the data save kernel (executable) to save. Rebooting the processor clears the currently executing instruction sequence from the designated executing program (application executing under the control of an operational (executing) OS). And, the reboot procedure reloads a new instruction sequence (i.e. the data save kernel) for the processor to initiate executing instructions.

In addition, as part of the reboot procedure, volatile memory is erased when power is no longer supplied (during a power-off power-on sequence, if one is completed as part of the reboot procedure).

Prior art references disclose the save of volatile memory in the event of an abnormal condition (i.e. power failure, system crash). Prior art references disclose the

reboot of a computer system with a reduced kernel after an abnormal condition (system crash). Prior art references disclose a reboot procedure without the loss of data in memory such as the well known in the art volatile memory.

Reboot Definitions:

With power-off and power-on sequence:

(http://www.thefreedictionary.com/reboot)

(http://www.webopedia.com/TERM/R/reboot.html)

(http://www.allwords.com/word-reboot.html)

(http://searchsmb.techtarget.com/sDefinition/0,,sid44_gci947403,00.html)

(http://www.yourdictionary.com/ahd/r/r0076750.html)

Without no power-off and power-on sequence:

(http://www.scala.com/definition/reboot.html)

The majority or almost all definitions for the term *"reboot"* indicate a power-off and power-on sequence as a possible step in the reboot procedure. The general consensus appears to be that a reboot can involve a power-off and power-on sequence. This sequence is not excluded by the specification and the original claims. Therefore, this disclosure renders the term "reboot" in the specification indefinite. If applicant feels that there is no indefinite problem with term "reboot", please indicate the citations that state a definition for the term "reboot" for confirmation.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims **1, 10, 13, 17, 24, 28** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

There is no disclosure for the amended claim limitation: "wherein the reboot occurs without a loss of data within the volatile memory" in the specification or the original claims. Therefore, this claim limitation was not in the application as originally filed. Matter not in the original specification, claims, or a drawing is usually considered new matter.

The specification does suggest that data may be loss from memory due to a loss of power for a computer system (see specification pages 2-3). The specification states: "Data residing in the computer's volatile memory must be transferred to non-volatile memory before short-term power is exhausted". This statement suggests that when power is exhausted or removed from the computer system the contents of volatile memory are destroyed or erased. But, there is no disclosure for the limitation: "wherein the reboot occurs without a loss of data within the volatile memory". In other words, the "reboot procedure" must be completed without a loss of data in volatile memory.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims **1, 3 - 7, 10, 11, 13 - 21, 24 - 30** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Moiroux et al.** (US Patent No. **7,231,547**) in view of **Tallam** (US Patent No. **6,948,099**) and further in view of **Strange et al.** (US Patent No. **6,965,989**).

With Regards to Claim 1, Moiroux discloses an apparatus for rapidly, deterministically transferring data, the apparatus comprising:

a) a processor configured to process data; (see Moiroux col. 3, lines 43-44: processor)

b) a volatile memory configured to store the data; (see Moiroux col. 3, lines 43-46: RAM (volatile memory))

d) the data transfer kernel configured to support a data save operation configured to save data in the volatile memory to a storage device. (see Moiroux col. 1, lines 55-60: method step: save current system memory context to non-volatile storage for entering a state (shutdown correctly or incorrectly); col. 2, lines 8-11: provide

a back-up mechanism)

Moiroux discloses wherein a boot control module configured to boot the processor with a standard operating kernel under a normal operating system. (see Moiroux col. 3, line 67 - col. 4, line 4: OS conventionally loaded from a predetermined place on a HDD (standard OS load)) And, Moiroux discloses wherein a data transfer kernel. (see Moiroux col. 1, lines 55-60: save current system memory context to non-volatile memory (data save kernel))

Moiroux does not specifically disclose rebooting with a different kernel under an abnormal operating condition that threatens a loss of data.

However, Tallam discloses:

c) reboot the processor under an abnormal operating condition that threatens a loss of data; (see Tallam col. 5, lines 5-10: boot loader (boot control module) for loading the OS; col. 3, lines 48-49: col. 4, lines 13-17: OS rebooted; col. 3, lines 33-36: kernel reduced to only code which is necessary to implement required functions)

It would have been obvious to one of ordinary skill in the art to modify Moiroux to reboot with a different kernel under an abnormal operating condition that threatens a loss of data as taught by Tallam. One of ordinary skill in the art would have been motivated to employ the teachings of Tallam in order for a better way to re-load an operating system due to operating system corruption or availability of updates. (see Tallam col. 1, lines 48-50: " ... *Thus, there is a continuing need for*

better ways to re-load an operating system due to operating system corruption or the availability of updates. … ")

Moiroux-Tallam does not specifically disclose the reboot occurs without a loss of data within memory. However, Strange discloses wherein the reboot occurs without a loss of data within the memory. (see Strange col. 4, lines 5-12: reboot of a file server that skips certain conventional boot processes; time is saved by avoiding a full shutdown of processor and memory; refrain from a full clearance of file server memory; col. 11, lines 2-7: full clearance (zeroing) of memory is skipped in warm reboot)

It would have been obvious to one of ordinary skill in the art to modify Moiroux-Tallam for the reboot to occur without a loss of data within memory as taught by Strange. One of ordinary skill in the art would have been motivated to employ the teachings of Strange to provide for faster reboot of a file server by reducing downtime resulting from file server unavailability and does not appreciably increase the risk of error or failure. (Strange col. 3, line 64 - col. 4, line 2: " … *It is therefore an object of this invention to provide a system and method for faster reboot of a file server than a conventional "cold" reboot that does not appreciably increase the risk of propagation of a software or hardware error/failure. This system and method should generally reduce downtime as a result of file server unavailability. … "*)

With Regards to Claim 3, Moiroux discloses the apparatus of claim 1, wherein the data save operation is selected from the group consisting of a storage configuration

operation, a transfer process loading operation, a data transfer operation, and a system shutdown operation. (see Moiroux col. 1, lines 55-60: save operation (data transfer operation))

With Regards to Claims 4, 11, Moiroux discloses the apparatus of claims 3, 10, wherein the data transfer kernel is configured to support the data save operation. (see Moiroux col. 1, lines 55-60: save operation (data transfer operation)) (see Moiroux col. 1, lines 55-60: data save of system memory context) Moiroux does not specifically disclose exclusively supporting data save operation. However, Tallam discloses wherein exclusively supporting data save operation. (see Tallam col. 3, lines 33-36: minimal kernel)

It would have been obvious to one of ordinary skill in the art to modify Moiroux to exclusively supporting data save operation as taught by Tallam. One of ordinary skill in the art would have been motivated to employ the teachings of Tallam in order for a better ways to re-load an operating system due to operating system corruption or the availability of updates. (see Tallam col. 1, lines 48-50)

With Regards to Claim 5, Moiroux discloses the apparatus of claim 1, further comprising a memory module comprising data bits for marking data to be saved during the data save operation. (see Moiroux col. 3, lines 42-46; col. 3, lines 49-56: RAM image saved during save operation; device register values are transferred to form part of RAM image)

With Regards to Claim 6, Moiroux discloses the apparatus of claim 5, wherein the standard operating kernel is further configured to mark data to be saved during a data save operation. (see Moiroux col. 3, lines 49-56: device register values are transferred from the devices into the RAM image RAM image configured to save OS))

With Regards to Claims 7, 21, Moiroux discloses the apparatus, system of claims 1, 17, wherein the data transfer kernel is configured to configure a storage device for specialized data save operations. (see Moiroux col. 3, lines 49-56: device register values are transferred from the devices into the RAM image; RAM image configured to save OS))

With Regards to Claim 10, Moiroux discloses an apparatus for rapidly, deterministically transferring data to a storage device, the apparatus comprising:

a) a storage device configured to store data; (see Moiroux col. 4, lines 54-63: save system memory context to HDD (non-volatile memory))

b) a data transfer kernel configured to support data saving operations; (see Moiroux col. 1, lines 55-60: save operation (data transfer operation))

Moiroux discloses wherein a computer in communication with the storage device, the computer configured to load a kernel configured to support a data save operation to save data in volatile memory to the storage device. (see Moiroux col. 1, lines 55-60: save current system memory context to non-volatile memory)

Moiroux does not specifically disclose rebooting with a different kernel under an abnormal operating condition that threatens a loss of data.

However, Tallam discloses:

c) a reboot procedure in response to an abnormal operating condition that threatens the loss of data in a volatile memory; (see Tallam col. 5, lines 5-10: boot loader (boot control module) for loading the OS; col. 3, lines 48-49: col. 4, lines 13-17: OS rebooted; col. 3, lines 33-36: kernel reduced to only code which is necessary to implement required functions)

It would have been obvious to one of ordinary skill in the art to modify Moiroux to reboot with a different kernel under an abnormal operating condition that threatens a loss of data as taught by Tallam. One of ordinary skill in the art would have been motivated to employ the teachings of Tallam in order for a better ways to re-load an operating system due to operating system corruption or the availability of updates. (see Tallam col. 1, lines 48-50)

Moiroux does not specifically disclose the reboot occurs without a loss of data within memory. However, Strange discloses wherein the reboot occurs without a loss of data within the memory. (see Strange col. 4, lines 5-12: reboot of a file server that skips certain conventional boot processes; time is saved by avoiding a full shutdown of processor and memory; refrain from a full clearance of file server memory; col. 11, lines 2-7: full clearance (zeroing) of memory is skipped in warm reboot)

It would have been obvious to one of ordinary skill in the art to modify Moiroux

for the reboot to occur without a loss of data within memory as taught by Strange. One of ordinary skill in the art would have been motivated to employ the teachings of Strange to provide for faster reboot of a file server by reducing downtime resulting from file server unavailability and does not appreciably increase the risk of error or failure. (Strange col. 3, line 64 - col. 4, line 2)

With Regards to Claim 13, Moiroux discloses an apparatus for rapidly, deterministically saving data, the apparatus comprising:

a) means for saving data in a non-volatile memory; (see Moiroux col. 1, lines 55-60: save operation (data transfer operation))

b) means for detecting a data save condition comprising an abnormal operating condition that threatens the loss of data in a volatile memory; (see Moiroux col. 1, lines 55-60: save data in preparation for entering a state (state indication: shutdown correctly or incorrectly))

Moiroux discloses means for a processor with a kernel in response to the abnormal operating condition, the kernel configured as a means for saving data (see Moiroux col. 1, lines 55-60: save current system memory context to non-volatile storage)

Moiroux does not specifically disclose to reboot with a different kernel under an abnormal operating condition that threatens a loss of data.

However, Tallam discloses:

c) means for booting a processor with a data transfer kernel in response to the

abnormal operating condition. (see Tallam col. 5, lines 5-10: boot loader (boot control module) for loading the OS; col. 3, lines 48-49: col. 4, lines 13-17: OS rebooted; col. 3, lines 33-36: kernel reduced to only code which is necessary to implement required functions)

It would have been obvious to one of ordinary skill in the art to modify Moiroux to reboot with a different kernel under an abnormal operating condition that threatens a loss of data as taught by Tallam. One of ordinary skill in the art would have been motivated to employ the teachings of Tallam in order for a better ways to re-load an operating system due to operating system corruption or the availability of updates. (see Tallam col. 1, lines 48-50)

Moiroux does not specifically disclose the reboot occurs without a loss of data within memory. However, Strange discloses wherein the reboot occurs without a loss of data within the memory. (see Strange col. 4, lines 5-12: reboot of a file server that skips certain conventional boot processes; time is saved by avoiding a full shutdown of processor and memory; refrain from a full clearance of file server memory; col. 11, lines 2-7: full clearance (zeroing) of memory is skipped in warm reboot)

It would have been obvious to one of ordinary skill in the art to modify Moiroux for the reboot to occur without a loss of data within memory as taught by Strange. One of ordinary skill in the art would have been motivated to employ the teachings of Strange to provide for faster reboot of a file server by reducing downtime resulting from file server unavailability and does not appreciably increase the risk of error or failure. (Strange col. 3, line 64 - col. 4, line 2)

With Regards to Claim 14, Moiroux discloses the apparatus of claim 13, further comprising means for configuring the means for saving data for data save operations. (see Moiroux col. 3, lines 49-56: device register values are transferred from the devices into the RAM image; RAM image configured to save OS))

With Regards to Claim 15, Moiroux discloses the apparatus of claim 13, further comprising means for booting a standard operating kernel for normal operation. (see Moiroux col. 3, line 67 - col. 4, line 4: OS is conventionally loaded from a predetermined place on a HDD)

With Regards to Claims 16, 27, 29, Moiroux discloses the apparatus, system, computer readable storage medium of claims 13, 24, 28, wherein comprising marking data to be saved during a data save operation. (see Moiroux col. 3, lines 49-56: device register values are transferred from the devices into the RAM image; RAM image configured to save OS))

With Regards to Claim 17, Moiroux discloses a system for rapidly, deterministically saving data to a storage device, the system comprising:

a) a processor configured to process data; (see Moiroux col. 3, lines 43-44: processor)

b) a memory configured to provide volatile storage for the data; (see Moiroux col. 3,

lines 43-46: RAM (volatile memory))

c) a storage device configured to provide non-volatile storage for the data; (see Moiroux col. 4, lines 54-64: system memory context information stored on HDD (non-volatile storage))

Moiroux discloses wherein a boot control module configured to boot the processor module with a standard operating kernel under a normal operating condition (see Moiroux col. 1, line 67 - col. 2, line 4: OS conventionally loaded (normal boot) from a predetermined place on a HDD) and to use a data transfer kernel under an abnormal operating condition that threatens the loss of data in the memory; the data transfer kernel configured to support a data save operation configured to save data in the memory to the storage device. (see Moiroux col. 1, lines 55-60: save system memory context to non-volatile storage)

Moiroux does not specifically disclose a boot control module configured to boot the processor module and to reboot the processor.

However, Tallam discloses:

d) a boot control module configured to boot the processor module and to reboot the processor. (see Tallam col. 5, lines 5-10: boot loader (boot control module) for loading the OS; col. 3, lines 48-49: col. 4, lines 13-17: OS rebooted; col. 3, lines 33-36: kernel reduced to only code which is necessary to implement required functions)

It would have been obvious to one of ordinary skill in the art to modify Moiroux

for a boot control module configured to boot the processor module and to reboot the processor as taught by Tallam. One of ordinary skill in the art would have been motivated to employ the teachings of Tallam in order for a better ways to re-load an operating system due to operating system corruption or the availability of updates. (see Tallam col. 1, lines 48-50)

Moiroux does not specifically disclose the reboot occurs without a loss of data within memory. However, Strange discloses wherein the reboot occurs without a loss of data within the memory. (see Strange col. 4, lines 5-12: reboot of a file server that skips certain conventional boot processes; time is saved by avoiding a full shutdown of processor and memory; refrain from a full clearance of file server memory; col. 11, lines 2-7: full clearance (zeroing) of memory is skipped in warm reboot)

It would have been obvious to one of ordinary skill in the art to modify Moiroux for the reboot to occur without a loss of data within memory as taught by Strange. One of ordinary skill in the art would have been motivated to employ the teachings of Strange to provide for faster reboot of a file server by reducing downtime resulting from file server unavailability and does not appreciably increase the risk of error or failure. (Strange col. 3, line 64 - col. 4, line 2)

With Regards to Claim 18, Moiroux discloses the system of claim 17, wherein the standard operating kernel is configured to mark data in the memory to be saved by the data transfer kernel during a data save operation. (see Moiroux col. 3, lines 49-56: device register values are transferred from the devices into the RAM image; RAM image

configured to save OS)

With Regards to Claims 19, 30, Moiroux discloses the system, computer readable storage medium of claims 17, 28, wherein the data transfer kernel is configured to support devices operations and processes required to save data. (see Moiroux col. 1, lines 55-60: data save of system memory context) Moiroux does not specifically disclose exclusively supporting devices operations and processes required to save data. However, Tallam discloses wherein configured to exclusively support devices operations and processes required to save data. (see Tallam col. 3, lines 33-36: kernel with minimal software (data transfer only))

It would have been obvious to one of ordinary skill in the art to modify Moiroux to be configured to exclusively support devices operations and processes required to save data as taught by Tallam. One of ordinary skill in the art would have been motivated to employ the teachings of Tallam in order for a better ways to re-load an operating system due to operating system corruption or the availability of updates. (see Tallam col. 1, lines 48-50)

With Regards to Claim 20, Moiroux discloses the apparatus of claim 1, wherein the data transfer kernel is configured to support a data save operation. (see Moiroux col. 1, lines 55-60: data save operation; save system memory context)

With Regards to Claim 24, Moiroux discloses a method for rapidly, deterministically

saving data, the method comprising:

a) detecting a data save condition comprising that threatens the loss of data in a volatile memory; (see Moiroux col. 1, lines 55-60: save system memory context to non-volatile storage; indication system has shutdown correctly or incorrectly)

Moiroux discloses wherein a data transfer kernel configured to support a data save operation configured to save the data in the volatile memory to a non-volatile storage device. (see Moiroux col. 1, lines 55-60: save system memory context to non-volatile storage)

Moiroux does not specifically disclose rebooting a processor module with a kernel. However, Tallam discloses:

b) rebooting a processor module with a kernel. (see Tallam col. 5, lines 5-10: boot loader (boot control module) for loading the OS; col. 3, lines 48-49: col. 4, lines 13-17: OS rebooted; col. 3, lines 33-36: kernel reduced to only code which is necessary to implement required functions)

It would have been obvious to one of ordinary skill in the art to modify Moiroux to rebooting a processor module with a kernel as taught by Tallam. One of ordinary skill in the art would have been motivated to employ the teachings of Tallam in order for a better ways to re-load an operating system due to operating system corruption or the availability of updates. (see Tallam col. 1, lines 48-50)

Moiroux-Tallam does not specifically disclose a reboot without the loss of data within memory. However, Strange discloses wherein the reboot occurs without a loss of

data within the memory. (see Strange col. 4, lines 5-12: reboot of a file server that skips certain conventional boot processes; time is saved by avoiding a full shutdown of processor and memory; refrain from a full clearance of file server memory; col. 11, lines 2-7: full clearance (zeroing) of memory is skipped in warm reboot)

It would have been obvious to one of ordinary skill in the art to modify Moiroux for the reboot to occur without a loss of data within memory as taught by Strange. One of ordinary skill in the art would have been motivated to employ the teachings of Strange to provide for faster reboot of a file server by reducing downtime resulting from file server unavailability and does not appreciably increase the risk of error or failure. (Strange col. 3, line 64 - col. 4, line 2)

With Regards to Claim 25, Moiroux discloses the method of claim 24, further comprising supporting devices, operations, and conducting processes required to save data to a storage device. (see Moiroux col. 1, lines 55-60: data save of system memory context) Moiroux does not specifically disclose exclusively supporting to save data. However, Tallam discloses wherein exclusively supporting save data to a storage device. (see Tallam col. 3, lines 33-36: minimal kernel)

It would have been obvious to one of ordinary skill in the art to modify Moiroux to exclusively supporting save data to a storage device as taught by Tallam. One of ordinary skill in the art would have been motivated to employ the teachings of Tallam in order for a better ways to re-load an operating system due to operating system corruption or the availability of updates. (see Tallam col. 1, lines 48-50)

With Regards to Claim 26, Moiroux discloses the method of claim 24, further comprising configuring the non-volatile storage device to receive data. (see Moiroux col. 3, lines 49-56: device register values are transferred from the devices into the RAM image; RAM image configured to save OS))

With Regards to Claim 28, Moiroux discloses a computer readable storage medium comprising computer readable program code for rapidly, deterministically saving data, the program code configured to:

b) transfer the data with the data save operation from the memory module to a non-volatile storage device. (see Moiroux col. 1, lines 55-60: save system context (OS) to non-volatile storage medium)

Moiroux discloses wherein a data transfer kernel configured to support a data save operation and in response to an abnormal operating condition that threatens the loss of data in a memory module. (see Moiroux col. 1, lines 55-60: save current system memory context)

Moiroux does not specifically disclose to reboot with a different kernel under an abnormal operating condition that threatens a loss of data.

However, Tallam discloses:

a) boot a processor module in response to an abnormal operating condition that threatens the loss of data in a volatile memory module; (see Tallam col. 5, lines

5-10: boot loader (boot control module) for loading the OS; col. 3, lines 48-49: col. 4, lines 13-17: OS rebooted; col. 3, lines 33-36: kernel reduced to only code which is necessary to implement required functions)

It would have been obvious to one of ordinary skill in the art to modify Moiroux to reboot with a different kernel under an abnormal operating condition that threatens a loss of data as taught by Tallam. One of ordinary skill in the art would have been motivated to employ the teachings of Tallam in order for a better ways to re-load an operating system due to operating system corruption or the availability of updates. (see Tallam col. 1, lines 48-50)

Moiroux does not specifically disclose the reboot occurs without a loss of data within memory. However, Strange discloses wherein the reboot occurs without a loss of data within the memory. (see Strange col. 4, lines 5-12: reboot of a file server that skips certain conventional boot processes; time is saved by avoiding a full shutdown of processor and memory; refrain from a full clearance of file server memory; col. 11, lines 2-7: full clearance (zeroing) of memory is skipped in warm reboot)

It would have been obvious to one of ordinary skill in the art to modify Moiroux for the reboot to occur without a loss of data within memory as taught by Strange. One of ordinary skill in the art would have been motivated to employ the teachings of Strange to provide for faster reboot of a file server by reducing downtime resulting from file server unavailability and does not appreciably increase the risk of error or failure. (Strange col. 3, line 64 - col. 4, line 2)

8. Claims **8, 12, 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Moiroux-Tallam-Strange** and further in view of **Neuman et al.** (US PGPUB No. **20030217299**).

With Regards to Claims 8, 12, 22, Moiroux discloses the apparatus, system of claims 1, 10, 17, wherein the data transfer kernel. (see Moiroux col. 1, lines 55-60: saving the current system context (OS) to non-volatile memory) Moiroux does not specifically disclose wherein configured to conduct a power down procedure. However, Neuman discloses wherein configured to conduct a power down procedure. (see Neuman paragraph [0030], lines 1-5: power state management; paragraph [0003], lines 6-13; paragraph [0055], lines 1-7; paragraph [0057], lines 1-8: power down state (i.e. power down procedure))

It would have been obvious to one of ordinary skill in the art to modify Moiroux to enable a power down procedure as taught by Neuman. One of ordinary skill in the art would have been motivated to employ the teachings of Neuman in order to enable a reduction in the amount of data required to save system context for a recovery operation, and to enable a relatively fast wake-up procedure from a sleep state. (see Neuman paragraph [0015], lines 1-4: "*... Advantageously, embodiments of the present invention enable a power management system to be realised in which the amount of data that needs to be saved to preserve a system context is reduced. ...* "; paragraph [0017], lines 1-3: "*... Furthermore, embodiments allow, in the absence of a power failure, a relatively fast wake-up time from a sleep state. ...* ")

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlton V. Johnson whose telephone number is 571-270-1032. The examiner can normally be reached on Monday thru Friday , 8:00 - 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser Moazzami can be reached on 571-272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nasser G Moazzami/
Supervisory Patent Examiner, Art Unit 2436

Carlton V. Johnson
Examiner
Art Unit 2436

CVJ
March 2, 2009